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FORESTRY POLICY OF TYPICAL STATES—PENNSYLVANIA

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Before its settlement by white men Pennsylvania was practically covered by a dense forest growth. The few lakes and the river beds were almost the only portions which were unshaded from the direct rays of the sun. In this primeval forest the shade was dense enough to keep the soil constantly in a more or less moist condition, and the atmosphere during most of the year was at, or near, the point of saturation.

Two hundred and eighty-six years have completely changed the appearance of the state's surface, and so reduced the timber supply that Pennsylvania has already long ceased to produce enough for her own wants. That so great a change should have taken place in so short a period is surprising, though it is easily accounted for.

In order to encourage settlement of the country, land patents were granted by the state for the nominal sum of twenty-six and two-thirds cents an acre. It was not even necessary that the purchaser should be a settler. This condition of affairs continued until March 28, 1905, when an act was passed which authorized the State Forestry Commission to decide whether any tract to which the state still held title should be sold, or passed over to the Forestry Commission and become a part of the State Forest Reserve. From March 30, 1897, the commonwealth has been buying back its lands, usually with the timber removed, often at a larger price than it received for them whilst the timber was still upon them. The act of 1905 ended this folly. Timber so cheaply purchased was often sold at a slight advance in price. The consequence was that lumbering operations were unduly stimulated. Men were content to cut and sell at a price which left but a small margin of profit.

Anterior even to the development of the lumber industry came the removal of our forests to make room for agriculture and to pro-

vide homes for the farmers. The earliest settlements were naturally in the hard-wood regions of the eastern part of the state. There were extensive forests of various species of oak and hickory. Chestnut, yellow poplar, black walnut, elm, white ash, basswood, and other valuable trees were common and often attained large size. I remember when the timber was removed by fire from ground that was to be converted into a farm. There was no market for it. Farm land was needed, above all else, for the young couple starting in life. No one questioned the motive then. No one does now, except to say that it would have been a wiser thing to have cleared less ground, and to have farmed it better. The crop would probably have been as large. The richness of the soil, the ease with which it could be reached, absence of Indian wars in the early history of the colony, all hastened the early settlement of the eastern end of the state. Ship-building interests drew upon the splendid white oaks, and also upon the white pines from the mountains. Our timber was exported to the West Indies, and went also by way of the Ohio River to build homes in states to the west of us. Later there were three sawmills in the state that, combined, required annually the product of seven thousand acres of land, averaging thirty thousand feet, board measure, of lumber per acre; that is nearly eleven square miles.

The prevailing timber west of the Allegheny River was hard wood, as in the eastern part of Pennsylvania; but the cone-bearing trees, pine and hemlock, characterized the central mountain axes. Associated with these, however, especially in the northern counties, were beech, two kinds of birch, black cherry, and much valuable hard maple.

The lands cleared for lumber have, as a rule, been left in a deplorable condition—for the most part they have been practically abandoned by the owners and given over to forest fires. These are the lands which have been purchased by the commonwealth for forestry purposes; but before considering the economic relation of these impoverished lands, a word may be offered concerning some of the farm lands.

At a moderate estimate, it would be safe to say that there are in Pennsylvania to-day a million acres that are classed as farm lands, simply because agriculture is attempted upon them, but which barely produce the food required by a family and enough to spare for pur-

chase of raiment. These lands are becoming poorer each year, and must, sooner or later, go into the list of abandoned farms.

Remunerative agriculture upon them is hopeless under existing conditions, and well-nigh hopeless under any conditions that we may reasonably anticipate. Living upon them as farms leads to a low form of citizenship. As cleared lands they will inevitably become poorer. If restored to forest growth, the tendency would be for the soil to improve, and eventually we might expect that they would be covered with merchantable timber of good quality.

The class of grounds to which I now allude are the steep hillsides where a sandy or shaly soil is found. It is fairly an open question whether it would not be better for the owner, and his family, to plant his ground out in young timber trees and earn his living by some other mode than farming such land. If an industrious man, he would almost certainly earn a more comfortable living.

This leads to the question, what can the state do towards assisting in the restoration of such ground to a productive condition? First, it could furnish the seedling trees. To this it is practically already committed. Second, it could alter its present system of taxation, so as to make it possible for the land owner to attempt the policy of reforestation, which can be plainly shown to be as much in the interest of the state as of the land owner.

So far as we now see, it will not be possible for the commonwealth to obtain by purchase all the land it should have to ensure its own prosperous perpetuity and to guard against the disastrous conditions which inevitably follow upon excessive deforestation.

In addition, it may be safely stated that there are six million acres of land in Pennsylvania of an absolutely non-agricultural character, upon which there has been no attempt at farming. Most of this land is held by individuals, or corporations. Some of it may be used for grazing, but the time is certainly far distant when farming will be attempted upon it. It is essential, under any circumstances, that all of this six million acres should at once be placed under forest cover. To allow it to remain in its present condition will be ruinous because wash of soil from its surface will induce a desert condition. There are already vast areas now in this state which have become so hopelessly barren that it will require the expenditure of enormous sums to restore the ground to a productive

condition. Yet these very areas once produced a dense growth of valuable white pine and hemlock.

The exhaustion of timber in our state has been caused more by excessive taxation than by any real demand for lumber. If forest owners could have seen any coming relief from taxation, they would have been glad to hold their resources for the future, and only enough would have been cut to meet actual needs, and for this a fair payment would have been made. Regulation of cutting by "a trust," even, would have been helpful.

There seems to be but one remedy for this condition of affairs. Sixteen years ago attention was called to it by the present writer in the statement, "So long as land remains in the condition known as timber land, the owner, or owners, thereof should pay no taxes upon it, except in so far as he, or they, derive an actual revenue from it." If the statement had been modified so as to read "should pay no taxes upon the *timber*, except in so far as he or they derive an actual revenue from it," there would have been a practical accord with the new-born thesis of the National Conservation Association, which demands "the separation, for purposes of taxation, of the timber from the land on which it grows, so that the forest crop shall be taxed only when it is harvested, while the land shall be taxed every year."

It may be stated, as an indication of the advanced relation of Pennsylvania to the forestry problem, that a bill was introduced at the last legislature to create out of lands owned by individuals or corporations auxiliary forest reserves, to be practically under the direction of the State Department of Forestry. The land of these reserves was to be assessed for taxation at a maximum of one dollar an acre. The timber was to remain untaxed until cut, when the owner or owners were to pay an income tax of seventy-five cents for each thousand feet of coniferous timber cut, and fifty cents for each thousand feet of other timber cut. The bill failed of passage, but its reception was such as to indicate passage of it, or of a similar bill, in the near future.

Of these lands now owned in Pennsylvania by individuals, or by corporations, it may be safely said that if they are to be made again productive and useful, the state must either purchase them outright, or the tax must be removed from the timber whilst it is maturing. There seems to be no other solution in sight.

As a state Pennsylvania has made a notable start in forestry, by the purchase of 916,375 acres of non-agricultural land, which is set apart as a perpetual forest reserve, and which cannot be sold, or in any way alienated from the purpose for which it was intended. For planting all suitable land within this area three nurseries have been established, in which there are now millions of forest tree seedlings growing, which will be planted as fast as ready for removing.

Pennsylvania has had for several years a State Forest Academy, located at Mont Alto, in which young men are educated, at state expense, for the public forestry service. Admission to this school can be gained only after a rigid competitive examination. On the average, there are about sixty applicants each year, and from this number the ten who have passed the best mental and physical examination are accepted, after they have given satisfactory bond in the sum of five hundred dollars, to remunerate the state for money expended upon them, if they are dismissed for misconduct, failure to pass examinations, or for failure to promptly obey orders.

In addition to this forest academy, there is now a large class engaged in the study of forestry at the State College, where a highly satisfactory curriculum has been established. On the whole, Pennsylvania has made a creditable record in forestry. It is a matter of pride that her example has served as a stimulus to some other states.

All that has been done here, however, has led to a keener appreciation of how much remains undone. For example, for the state to plant and properly protect less than twenty million forest tree seedlings each year is simply to trifle with a great, pressing problem. If we were to plant a thousand such seedlings to the acre, the number above given would cover but little more than five and one-half miles square, out of an area probably fifty times as great, within this state, and on which there exists a no less urgent need of immediate forest protection. The ground is hilly on a large part of the land owned by the state, and the soil is generally of the loose sort which washes away most rapidly when deprived of its forest cover. It would not be difficult to point out areas in Pennsylvania which are capable of supporting from five to six hundred families, and which have been abandoned after lumbering. These areas have been swept by fire so often that no useful growth remains on them to protect the surface against the inevitable wash, which is rapidly transforming them into

actual deserts. Eventually the reclamation of such areas will become a public necessity, but the cost then, if stated now, would stagger belief. The only wise, economical thing to do is for the state to purchase such lands and to place them under care at once. It is an enormous problem, but it must be done sooner or later, in order that our increasing population may have occupation, food, and homes. The longer it is delayed, the more it will cost. Wherever our political system rises to the dignity of statesmanship, these facts will be recognized. It is for our State Forest Reservation Commission to place the problem fully and urgently before our general assembly, and put the responsibility of providing the means unequivocally upon that body. The duty of the commission is to buy land, and the duty of the state is to provide for its care. It is high time that the demands of all less fundamental interests upon the state treasury were relegated to the rear until this preservation of the soil of the commonwealth is attended to, for out of it, and of it alone, our prosperity must come.

From another point of view forestry merits consideration. I presume no one will dispute the proposition that a nation cannot be stronger than the aggregate of its citizens. It seems equally indisputable that, of our people, other things being equal, those who live most "in the open" are the most free from debilitating disease and are least dependent upon the public for charitable support. When we consider that a month or two of open air life, allowed to those who are confined in badly ventilated apartments (whether factory or office) often saves a hopeless breakdown and a prolonged or final absence from productive occupation, with probably the need of support in a charitable institution, the conclusion seems inevitable that it is cheaper, wiser and more humane to prevent than to cure disease. Fifty years of observation confirms me in this belief.

This leads to the inquiry whether it is not worth the attention of our legislators to consider ways and means of leading our ailing citizens into camp life, under proper restrictions, on the State Forest Reserves, in the hope that it would diminish the now wise and necessary expenditure for almshouses and sanatoria. The idea is not wholly new, as it was worked out to a triumphant success at Mont Alto before the camp developed, under the wise direction of Dr. Dixon, into a great sanatorium for the treatment of tuberculosis. It may as well be added that a bill looking toward such a plan was

introduced at the last legislature, assigned to the committee on appropriations, and perished there before being allowed a chance on the floor of the house. It needs no prophetic eye to recognize that the trend of events will lead to the adoption of some such plan in a not distant future.

The following figures received by the courtesy of the State Department of Forestry seem important and should accompany the foregoing discussion.

FIRE LOSSES IN 1908.

Number of acres burned over	398,855
Number of feet (board measure) of logs burned	10,216,032
Number of feet (board measure) of sawed lumber burned	931,350
Number of railroad ties burned	24,081
Number of mine props burned	223,813
Number of cords of pulp wood burned	15,531
Number of cords of cord wood burned	2,812
Number of cords of bark burned	408
Number of panels of fence burned	125,474
Number of buildings burned	59
Value of buildings burned	\$18,682.00
Cost of individuals to extinguish fires	\$108,158.97
Number of men employed by individuals	10,275
Number of days employed	4,578
Total loss by reason of forest fires	\$688,980.02
Number of fires by counties	1,961

NUMBER FEET MERCHANTABLE TIMBER DESTROYED BY FIRE DURING 1908.

Cut logs (B. M.)	10,216,032
Sawed lumber (B. M.)	931,350
Railroad ties (B. M.)	1,059,564
Mine props (B. M.)	4,028,634
	<hr/>
	16,235,580
Pulp wood (cords)	15,531
Cord wood (cords)	2,812
Bark (cords)	408
	<hr/>
	18,751

Average loss per acre, \$1.7266.

NUMBER AND CAUSES OF FOREST FIRES DURING 1908.

Unknown causes	835
Railroads	588
Burning brush	145
Incendiary	132
Hunters	127
Bee hunters	30
Sawmills	20
Boys and children	13
Dinkey engines	12
Fishermen	8
Berry pickers	7
Traction engines	4
Tramps	2
Oil well	1
Toy balloon	1
Carelessness	36
Total	1,961

TIMBER CUT IN 1908.

Number of acres cut over	105,736
Number of acres cut over to be used for farming purposes.....	5,225
Number of feet (board measure) white pine cut	51,678,063
Number of feet (board measure) hemlock cut	415,829,709
Number of feet (board measure) other woods cut	320,270,726
Number of cords of bark peeled	250,869
Number of cords used as pulp wood	169,724
Number of cords used in the manufacture of alcohol or acid	135,008
Total number of cords of cord wood cut	385,139
Number of feet (board measure) cut for mine props	51,075,135
Number of feet (board measure) cut for railroad ties	13,515,543
Number of feet (board measure) cut for telegraph poles	485,450